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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Akira Mizuno

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EXAMINER

MCKANE, ELIZABETH L

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/594,387	Applicant(s) MIZUNO ET AL.	
	Examiner ELIZABETH L. MCKANE	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Lin et al. (US 5,876,666).

Lin et al. teaches a sterilization apparatus including a chamber **30**, a decompression unit **36**, a hydrogen peroxide supply unit **42**, an ozone supply unit **42**, an exhaust unit **36**, and a plasma generation unit **50**. As to the unit **42** being used to supply hydrogen peroxide and/or ozone, expressions relating an apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claims. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." *In re Young*, 75 F.2d 996, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F. 2d 937, 136 USPQ 458, 459 (CCPA 1963)).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Duroselle (US 6,096,266) in view of Lin et al. (US 5,876,666) or Jacobs et al. (US 4,756,882).

With respect to claims 1 and 3, Duroselle teaches a method of sterilization within a chamber wherein the method includes the steps of decompressing the chamber (col.1, lines 46-47), supplying hydrogen peroxide into the chamber (col.1, lines 42-43), supplying ozone into the chamber (col.1, lines 49-50), sterilizing the object with sterilant gas (col.1, lines 51-53), and exhausting gas from the chamber (col.2, lines 51-53) to destroy the ozone therein. Duroselle is silent with respect to generating plasma within the chamber.

Lin et al. discloses a method of sterilization within a chamber using hydrogen peroxide wherein a plasma is used at the end of the sterilization process to "remove any residual hydrogen peroxide remaining on the sterilized articles." See col.10, lines 49-53; col.11, lines 41-48.

Jacobs et al. teaches a similar method of sterilizing within a chamber using hydrogen peroxide which also employs a plasma to remove residual hydrogen peroxide by converting it into non-toxic decomposition products. See Abstract.

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ a plasma at the end of the sterilization process to remove residual hydrogen peroxide from the articles therein, as disclosed by both Lin et al. and Jacobs et al..

As to claim 2, Duroselle teaches that the remaining ozone is 'destroyed'. The examiner submits that one of ordinary skill in the art would understand this term to mean that the ozone is broken down into oxygen and water. This is a common practice in the art of sterilization and any skilled practitioner would understand the meaning of 'destroying ozone'.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Duroselle and either Lin et al. or Jacobs et al. as applied to claim 1 above, and further in view of Lin et al. (US 6,224,828).

Duroselle is silent with respect to circulating the sterilizing gas within the chamber. Lin et al. '828 teaches a method of sterilizing using a gaseous hydrogen peroxide sterilant wherein a pump **18** is employed to circulate the gas within the sterilization chamber. It would have been obvious to circulate the gas within the chamber of Duroselle in order to assure adequate contact of the sterilant with the objects therein.

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7. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duroselle in view of Jacobs et al. (US 4,756,882) or Lin et al. (US 5,876,666).

With respect to claim 5, Duroselle teaches a sterilization apparatus including a chamber (col.1, line 41), a decompression unit (col.1, line46), a hydrogen peroxide supply unit (col.2, lines 1-5), an ozone supply unit (col.2, lines 13-16), and an exhaust unit (col.1, lines 46-47). Duroselle is silent with respect to a plasma generation unit.

Jacobs et al. teaches a sterilization apparatus using hydrogen peroxide which also employs a plasma generator **13** to remove residual hydrogen peroxide by converting it into non-toxic decomposition products. See Abstract.

Lin et al. discloses a sterilization apparatus also using hydrogen peroxide wherein a plasma generator **50** is used at the end of the sterilization process to “remove any residual hydrogen peroxide remaining on the sterilized articles.” See col.10, lines 49-53; col.11, lines 41-48.

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ a plasma generator in the apparatus of Duroselle in order to remove residual hydrogen peroxide from the articles therein, as disclosed by both Lin et al. and Jacobs et al..

As to claim 6, Jacobs et al. discloses a bend in line **11** which would necessarily act to reduce scattering. Lin et al. teaches an enclosure **10** and valve **14a** which would also reduce scattering. It would have been obvious to use either of the sterilant supply means of Jacobs et al. or Lin et al. as being sterilant supply means known in the art, where the results of doing so are not unexpected.

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With respect to claims 7 and 8, Duroselle teaches that the remaining ozone is 'destroyed'. The examiner submits that one of ordinary skill in the art would understand this term to mean that the ozone is broken down into oxygen and water. This is a common practice in the art of sterilization and any skilled practitioner would understand the meaning of 'destroying ozone'.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Duroselle, Jacobs et al. and Lin et al. as applied to claim 5 above, and further in view of Lin et al. (US 6,224,828).

Duroselle is silent with respect to a circulating unit for circulating the sterilizing gas within the chamber. Lin et al. '828 teaches a method of sterilizing using a gaseous hydrogen peroxide sterilant wherein a pump **18** is employed to circulate the gas within the sterilization chamber. It would have been obvious to employ a circulating unit within the chamber of Duroselle in order to assure adequate contact of the sterilant with the objects therein.

9. Claims 10 and 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Duroselle, Jacobs et al. and Lin et al. as applied to claim 5 above, and further in view of Destrez et al. (US 2005/0109739).

Although Duroselle with Jacobs et al. or Lin et al. teaches use of an electrode for the generation of plasma, the claimed electrode configuration is not disclosed. However, the claimed configuration is evidenced by Destrez et al. which teaches a plasma generator for a sterilization system. The generator includes a high-voltage

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electrode **26** connected to a high-voltage power source **20** and a low-voltage electrode **28** connected to ground **32**. See figure 3. Destrez et al. further teaches that the high-voltage electrode includes a plurality of point electrodes (see Figure 2). An insulator **30** is disclosed to be positioned between the high-voltage electrode and the low-voltage electrode - i.e. the high-voltage electrode is 'surrounded' by the insulator. See paragraph [0042]. It would have been obvious to employ the plasma generator of Destrez et al. for that of the combination since Destrez et al. teaches that the inventive plasma generator is an effective plasma generator giving reproducible effects over an extended period of time.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIZABETH L. MCKANE whose telephone number is (571)272-1275. The examiner can normally be reached on Mon-Fri; 5:30 a.m. - 2:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth L McKane/
Primary Examiner, Art Unit 1797

elm
25 May 2009